Course Syllabus

Description:

Algebra I is the foundation—the skills acquired in this course contain the basic knowledge needed for all future high school math courses. The material covered in this course is important, but everyone can do it. Everyone can have a good time solving the hundreds of real-world problems algebra can help answer. Course activities make the numbers, graphs, and equations more real. The content in this course is tied to real-world applications like sports, travel, business, and health. This course is designed to give students the skills and strategies to solve all kinds of mathematical problems. Students will also acquire the confidence needed to handle everything high school math has in store for them. Algebra I emphasizes the importance of algebra in everyday life through hundreds of real-world examples. Assessments are designed to ensure that your understanding goes beyond rote memorization of steps and procedures. Upon successful course completion, you will have a strong foundation in Algebra I and will be prepared for other higher level math courses.

Estimated Completion Time: 2 segments / 32-36 weeks

Major Topics and Concepts:

Segment I:

Module 01: Algebra Foundations

- 01.00: Introduction and Pretest
- 01.01: Numerical Operations
- 01.02: Algebraic Expressions
- 01.03: Units and Graphs
- 01.04: Module One Quiz
- 01.05: Descriptive Modeling and Accuracy
- 01.06: Translations
- 01.07: Algebraic Properties and Equations
- 01.08: Module One Review and Practice Test
- 01.09: Discussion-Based Assessment
- 01.10: Reflection
- 01.11: Module One Test

Module 02: Equations and Inequalities

- 02.00: Module Two Pretest
- 02.01: One-Variable Equations
- 02.02: Two-Variable Equations
- 02.03: Absolute Value Equations
- 02.04: Module Two Quiz
- 02.05: Inequalities
- 02.06: Compound Inequalities
- 02.07: Literal Equations
- 02.08: Module Two Review and Practice Test
- 02.09: Discussion-Based Assessment
- 02.10: Module Two Test

Module 03: Linear Functions
03.00: Module Three Pretest
03.01: Relations and Functions
03.02: Function Notation and Graphs
03.03: Linear Functions
03.04: Module Three Quiz
03.05: Linear Models
03.06: Writing Linear Functions
03.07: Horizontal and Vertical Lines
03.08: Reflection
03.09: Module Three Review and Practice Test
03.10: Discussion-Based Assessment

03.11: Module Three Test

Module 04: Exponential Functions

04.00: Module Four Pretest
04.01: Properties of Exponents
04.02: Operations with Radicals
04.03: Exponential Functions and Models
04.04: Module Four Quiz
04.05: Graphing Exponential Functions
04.06: Sequences
04.07: Exploring Linear and Exponential Growth
04.08: Module Four Review and Practice Test
04.09: Discussion-Based Assessment
04.10: Module Four Test

Module 05: Systems of Equations

05.00: Module Five Pretest
05.01: Solving Systems of Equations Graphically
05.02: Solving Systems of Equations Algebraically
05.03: Solving Systems of Equations Approximately
05.04: Module Five Quiz
05.05: Two-Variable Linear Inequalities
05.06: Systems of Linear Inequalities
05.07: Reflection
05.08: Exam Preparation
05.09: Module Five Review and Practice Test
05.10: Discussion-Based Assessment
05.11: Module Five Test
05.12: Segment One Review and Practice Test
05.13: Segment One Exam

Segment II
Module 06: Statistics

06.00: Module Six Introduction and Pretest
06.01: Representing Data
06.02: Comparing Data Sets
Module 07: Polynomials

- 07.00: Module Seven Pretest
- 07.01: Introduction to Polynomials
- 07.02: Addition and Subtraction of Polynomials
- 07.03: Multiplication of Monomials
- 07.04: Division of Monomials
- 07.05: Module Seven Quiz
- 07.06: Multiplication of Polynomials
- 07.07: Special Products
- 07.08: Division of Polynomials
- 07.09: Function Operations
- 07.10: Module Seven Review and Practice Test
- 07.11: Discussion-Based Assessment
- 07.12: Module Seven Test

Module 08: Factoring

- 08.00: Module Eight Pretest
- 08.01: Greatest Common Factor
- 08.02: Factoring By Grouping
- 08.03: Factoring Trinomials
- 08.04: Module Eight Quiz
- 08.05: Perfect Square Trinomials
- 08.06: Difference of Perfect Squares
- 08.07: Polynomial Functions
- 08.08: Reflection
- 08.09: Module Eight Review and Practice Test
- 08.10: Discussion-Based Assessment
- 08.11: Module Eight Test

Module 09: Quadratic Functions

- 09.00: Module Nine Pretest
- 09.01: Quadratic Models
- 09.02: Quadratics and Completing the Square
- 09.03: Module Nine Quiz
- 09.04: Quadratics and the Quadratic Formula
- 09.05: Applications of Quadratic Functions
- 09.06: Exploring Non-Linear Systems and Growth
- 09.07: Reflection
Course Assessment and Participation Requirements:

To achieve success, students are expected to submit work in each course weekly. Students can learn at their own pace; however, “any pace” still means that students must make progress in the course every week. To measure learning, students complete self-checks, practice lessons, multiple choice questions, projects, discussion-based assessments, and discussions. Students are expected to maintain regular contact with teachers; the minimum requirement is monthly. When teachers, students, and parents work together, students are successful.